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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,456	05/27/2005	Nicolas Sarrut	123883	3380

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EXAMINER	
KAFIMOSAVI, HOSEIN	
ART UNIT	PAPER NUMBER
4132	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,456	SARRUT, NICOLAS	
	Examiner	Art Unit	
	HOSEIN KAFIMOSAVI	4132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/11/05, Preliminary Amendments*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/11/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Analysis

The Court of Appeals for the Federal Circuit, in its en banc decision *In re Donaldson Co.*, 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994), decided that a "means-or- step-plus-function" limitation should be interpreted in a manner different than patent examining practice had previously dictated. The Donaldson decision affects only the manner in which the scope of a "means or step plus function" limitation in accordance with 35 U.S.C. 112, sixth paragraph, is interpreted during examination. *Donaldson* does not directly affect the manner in which any other section of the patent statutes is interpreted or applied.

A claim limitation will be presumed to invoke 35 U.S.C. 112, sixth paragraph, if it meets the following 3-prong analysis:

(A) the claim limitations must use the phrase "means for" or "step for;"

(B) the "means for" or "step for" must be modified by functional language;

(C) the phrase "means for" or "step for" must not be modified by sufficient structure, material, or acts for achieving the specified function.

As to claim 8, the phrase "means for" is modified by sufficient structure, material or acts for achieving the specified function, the USPTO will not apply 35 U.S.C. 112 sixth paragraph, until such modifying language is deleted from the claim limitation.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Adjari et al. (US 5,593,565).

As to claim 8, Adjari discloses a microfluidic device comprising at least one microchannel (Corridor C), said microchannel being bounded by a bottom wall, side walls and a top wall, while the said microfluidic device comprising at least one electrode (3) arranged on at least one part of a first wall of the microchannel, over the entire length thereof, and at least one counter-electrode (4) arranged over the entire length of the microchannel, on at least one part of a second wall arranged facing the electrode (Figure 5; Column 7, lines 48-50; Column 8, lines 12-15).

As to claim 9, Adjari discloses the microfluidic device above, wherein the counter-electrode is arranged on the whole of the second wall (Figure 5; Column 7, lines 48-50; Column 8, lines 12-15).

As to claim 10, Adjari discloses the microfluidic device above, wherein the electrode and counter-electrode are respectively arranged on the bottom and top wall (Figure 5; Column 7, lines 48-50; Column 9, lines 18-28).

As to claim 11, Adjari discloses the microfluidic device above, wherein the electrode and counter-electrode may be respectively arranged on the side walls (Figure 5; Column 8, lines 4-16).

As to claim 12, Adjari discloses that the microfluidic device above comprises insulating means (9) (Figure 5; Column 5, lines 56-58) arranged between the electrode or counter-electrode and said fluid or said liquid. The material worked upon (liquid, fluid) does not limit the scope of an apparatus claim (MPEP2114[R-1]).

As to claim 13, the material worked upon (liquid, fluid) does not limit the scope of an apparatus claim (MPEP2114[R-1]). However, Adjari discloses the microfluidic device above, wherein the fluid flows in microchannel in an opposite direction that of the particles that are being separated. Adjari further discloses that the separation of particles occurs due to the difference in electric fields created by the electrode and counter-electrode (Column 5, lines 15-22). Similarly, the applicant discloses that separation of fluid or liquid occurs based on the potential difference applied between the electrode and the counter-electrode when the electrode and counter-electrode are arranged on the whole first and second walls, respectively (Specification Page 11, Lines 10-15). Therefore, the device of Adjari would have been capable of having fluid and liquid flow in opposite directions.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 8-14 are rejected under 35 U.S.C. 103(a) as being obvious over Ticknor et al. (US 7,016,560 B2) in view of Adjari et al.

As to claim 8, Ticknor discloses a microfluidic device comprising at least one microchannel (900) (designed to contain at least one liquid (901) and at least one fluid non-miscible (902) with the liquid), said microchannel being bounded by a bottom wall, side walls and a top wall (Column 7, lines 1-5); said microfluidic device comprising at least one electrode (904) arranged on at least one part of a first wall of the microchannel and at least one counter-electrode (903) on at least one part of a second wall arranged facing the electrode (Figure 9; Column 24, lines 59-67).

Ticknor further discloses that a continuous channel may be configured by applying multiple sets of electrodes spaced around the entire microchannel (Column 36,

lines 9-17). However, the reference does not disclose one electrode over the entire length of the first wall and one counter-electrode over the entire length of the second wall.

Adjari discloses a microfluidic device comprising at least one microchannel (Corridor C), said microchannel being bounded by a bottom wall, side walls and a top wall, with the said microfluidic device comprising at least one electrode (3) arranged on at least one part of a first wall of the microchannel, over the entire length thereof, and at least one counter-electrode (4) arranged over the entire length of the microchannel, on at least one part of a second wall arranged facing the electrode (Figure 5; Column 7, lines 48-50; Column 8, lines 12-16). Adjari further discloses that it is not necessary to break down each electrode into a plurality of adjacent and independent electrodes supplied independent of each other which simplifies the microfluidic device and makes it easier to control (Column 10, lines 25-28; Column 1, lines 51-59).

It would have been obvious to one with ordinary skill in the art at the time of the invention to have the microfluidic device of Ticknor comprised of an electrode arranged on at least one part of a first wall of the microchannel, over the entire length thereof, and at least one counter-electrode arranged over the entire length of the microchannel, on at least one part of a second wall arranged facing the electrode, as taught by Adjari, for the benefit of simplifying the microfluidic device and making it easier to control (Adjari at Column 1, lines 51-59).

As to claim 9, Ticknor discloses, as modified in view of Adjari, the microfluidic device above, wherein the counter-electrode is arranged on the whole of the second wall (Adjari at Column 8, lines 12-16).

As to claim 10, Ticknor discloses, as modified in view of Adjari, the microfluidic device above, wherein the electrode and counter-electrode are respectively arranged on the bottom and top wall (Ticknor at Column 7, lines 1-8).

As to claim 11, Ticknor discloses, as modified in view of Adjari, the microfluidic device above, wherein the electrode and counter-electrode may be respectively arranged on the side walls (Ticknor at Column 7, lines 1-5).

As to claim 12, Ticknor discloses, as modified in view of Adjari, the microfluidic device above, comprising insulating means (Ticknor at Column 20, lines 5-9) arranged between the electrode or counter-electrode and said fluid or said liquid. The material worked upon (liquid, fluid) does not limit the scope of an apparatus claim (MPEP2114[R-1]); however Ticknor discloses the fluid or liquid being electrically conducting (Column 10; lines 59-63).

As to claim 13, the material worked upon (liquid, fluid) and the manner by which the microfluidic device cooperates with the material worked upon does not limit the scope of an apparatus claim (MPEP 2114[R-1]); however, the microfluidic device of Ticknor, as modified in view of Adjari, is capable of having the fluid flow in the microchannel in an opposite direction to that of the liquid.

As to claim 14, Ticknor discloses, as modified in view of Adjari, the microfluidic device above, wherein the microchannel comprises, at least one end, two end

microchannels (ports) designed for the fluid and the liquid to respectively flow therethrough (Column 51, Line 17-20).

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over Adjari et al. as applied to claim 8 above and further in view of Ticknor et al.

As to claim 10, the examiner took the position that the electrode (3) and counter-electrode (4) of Adjari are respectively arranged on the bottom and top wall. However, if it is not taken that the electrode and counter-electrode are not respectively arranged as on the bottom and top wall; the following rejection is set forth to expedite prosecution.

Adjari discloses the electrode and counter-electrode are respectively arranged horizontally with the electrode (3) positioned on the lower surface of the microchannel and counter-electrode (4) positioned on the upper surface of the microchannel (Column 9; Lines 20-28).

Ticknor discloses that the microfluidic device above, wherein the electrode and counter-electrode are respectively arranged on the bottom and top wall (Ticknor at Column 7, lines 1-8).

It would have been obvious one with ordinary skill in the art at the time of the invention to have the electrode and counter-electrode of Adjari be respectively arranged on the bottom and top wall, as taught by Ticknor, in order to provide the designated effect throughout the entire device (Ticknor at Column 7, lines 1-7).

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOSEIN KAFIMOSAVI whose telephone number is (571)270-5271. The examiner can normally be reached on Mon - Fri, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ward Jessica can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. K./
Examiner, Art Unit 4132

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 4132